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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,872	10/06/2003	David Michael Hoffman	135344	3834

7590 06/01/2005

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EXAMINER	
YUN, JURIE	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AL

Office Action Summary	Application No.	Applicant(s)
	10/679,872	HOFFMAN ET AL.
	Examiner	Art Unit
	Jurie Yun	2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 4/5/05 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 7-10, 14-16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwanczyk et al. (USPN 5,773,829).

4. With respect to claims 1, 8, and 15, Iwanczyk et al. disclose a computed tomography (CT) imaging system (column 11, lines 19-23) comprising: a radiation source (Fig. 1, 26); a radiation detector (D) comprising: a scintillator array (22) comprising a plurality of scintillators (Fig. 2, 36A, 36B) arranged side by side, each of said scintillators separated from adjacent scintillators such that a gap (64) is defined therebetween, each of said scintillators having a geometric shape defined by a plurality of external surfaces (56, 58); and a reflector (60) comprising a plurality of cavities defined therein, each said cavity having a geometric shape substantially similar to each said scintillator geometric shape, said scintillator array coupled to said reflector such that each said respective scintillator is positioned at least partially within at least one respective reflector cavity; and a computer (27) operationally coupled to said radiation source and said radiation detector.

Iwanczyk et al. do not specifically disclose the reflector is pre-formed, but it is obvious that it is. The reflector consists of an epoxy doped with titantium dioxide (column 8, lines 46-47), which would have to be pre-formed before assembly because there is an air gap (62) between the reflector and the scintillator. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the Iwanczyk et al. reflector is pre-formed, for ease of manufacture and replacement.

5. With respect to claims 2, 7, 9, 14, 16, and 20, Iwanczyk et al. disclose the pre-formed reflector comprises at least one of a thermo set material and a thermo plastic material, said thermo set material and said thermo plastic material comprising titanium dioxide (column 8, lines 46-47).

6. With respect to claims 3 and 10, Iwanczyk et al. do not disclose coupling the scintillator array and the pre-formed reflector using an adhesive material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an adhesive material or some other functional equivalent means for coupling the scintillator array and the pre-formed reflector, to ensure proper alignment with one another, thus resulting in better images.

7. Claims 4-6, 11-13, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwanczyk et al. (USPN 5,773,829) as applied to claims 1, 8, and 15 above, and further in view of Duclos et al. (USPN 6,298,113 B1).

8. With respect to claims 4, 11, and 17, Iwanczyk et al. disclose the pre-formed reflector further comprises a titanium dioxide (column 8, lines 46-47). Iwanczyk et al. do

not disclose the pre-formed reflector further comprises a plurality of interstitial plates formed integrally with said pre-formed reflector, said interstitial plates comprising at least one of a tungsten material, a tantalum material, a molybdenum material, and a lead material. Duclos et al. disclose a reflector (Fig. 1, 5) comprising a plurality of interstitial plates (2) formed integrally with said reflector (column 4, lines 21-23), said interstitial plates comprising at least one of a tungsten material, a tantalum material, a molybdenum material, and a lead material (column 4, lines 48+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Iwanczyk et al. pre-formed reflector to further comprise a plurality of interstitial plates formed integrally with said pre-formed reflector, said interstitial plates comprising at least one of a tungsten material, a tantalum material, a molybdenum material, and a lead material, as taught by Duclos et al., to act as an x-ray damage shield (column 3, line 67) thus resulting in better images.

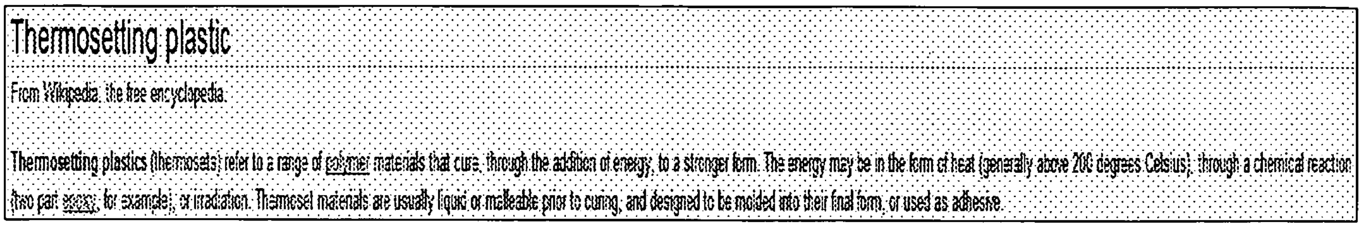
9. With respect to claims 5, 6, 12, 13, 18, and 19, Iwanczyk et al. do not disclose the pre-formed reflector further comprises a plurality of collimators and a plurality of interstitial plates formed integrally with said pre-formed reflector. Duclos et al. disclose a reflector comprising a plurality of collimators and a plurality of interstitial plates formed integrally with the reflector (column 11, lines 6-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Iwanczyk et al. pre-formed reflector to further comprise a plurality of collimators and a plurality of interstitial plates formed integrally with the pre-formed reflector, as taught by Duclos et al., to ensure precise alignment of these elements and thus result in better imaging.

Duclos et al. teach the separate construction of the collimator and the scintillator/reflector body is complex and requires accurate alignment of these devices during construction of the complete detector (column 1, lines 51-61).

Response to Arguments

10. Applicant's arguments filed 4/5/05 have been fully considered but they are not persuasive. Applicants traverse the assertion that although Iwanczyk et al. do not specifically disclose the reflector is pre-formed, it is obvious that it is. Applicants note that Figure 2 illustrates reflector (60) as a plurality of individual slabs of material joined at one end to another separate slab, and that a joint between each end and the connecting slab indicates reflector is not pre-formed, but, rather, is assembled. However, it is noted that the reflector is taught to be made of an epoxy doped with titanium dioxide (column 8, lines 46-47), and this would need to be shaped in a mold. It is not agreed that Figure 2 illustrates the reflector is assembled from individual slabs of material, but even if it is, the individual pieces would be pre-formed, and the reflector would be assembled of the individually pre-formed pieces defining the cavities therein. The fact that an air gap is disclosed between the reflector and scintillator also indicates that the reflector is pre-formed, otherwise, it is uncertain how the reflector would be formed over the scintillator with an air gap therebetween.

Applicants also traverse the assertion that Iwanczyk et al. disclose the reflector comprises at least one of a thermo set material and a thermo plastic material. However, the reflector is disclosed to be made of an epoxy doped with titanium dioxide (column 8, lines 46-47). An encyclopedia definition of thermosets is given:



Thermosetting plastic

From Wikipedia, the free encyclopedia.

Thermosetting plastics (thermosets) refer to a range of polymer materials that cure, through the addition of energy, to a stronger form. The energy may be in the form of heat (generally above 200 degrees Celsius), through a chemical reaction (two part epoxy, for example), or irradiation. Thermoset materials are usually liquid or malleable prior to curing, and designed to be molded into their final form, or used as adhesive.

According to this definition, an epoxy IS a thermoset.

Applicants traverse the assertion that it would have been obvious to one of ordinary skill in the art to use an adhesive material or some other functional equivalent means for coupling the scintillator array and the pre-formed reflector, to ensure proper alignment with one another, since there is an air gap, and that this would preclude using an adhesive to couple the scintillator to the reflector. However, there is no air gap at the bottom of the reflector, and this is where it would have been obvious to use either an adhesive material or some other functional equivalent means, because the reflector would need some type of support to keep it in position (ie. it should not just be "sitting" on top of the scintillator). For these reasons, the rejections are maintained.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 571 272-2497. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jurie Yun
May 27, 2005

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER